

INTRODUCTION

- Perioperative use of peripheral nerve blocks (PNBs) in breast plastic surgery is shown to reduce postoperative pain, opioid use, and nausea/vomiting.
- Despite clear evidence of benefit, PNB usage patterns, including race-ethnicity trends, have not been well characterized across contouring procedures in breast surgery, including mastopexy, reduction mammoplasty, and breast augmentation.
- The objective of the current study was to examine race-ethnicity variations in PNB use across breast contouring procedures.

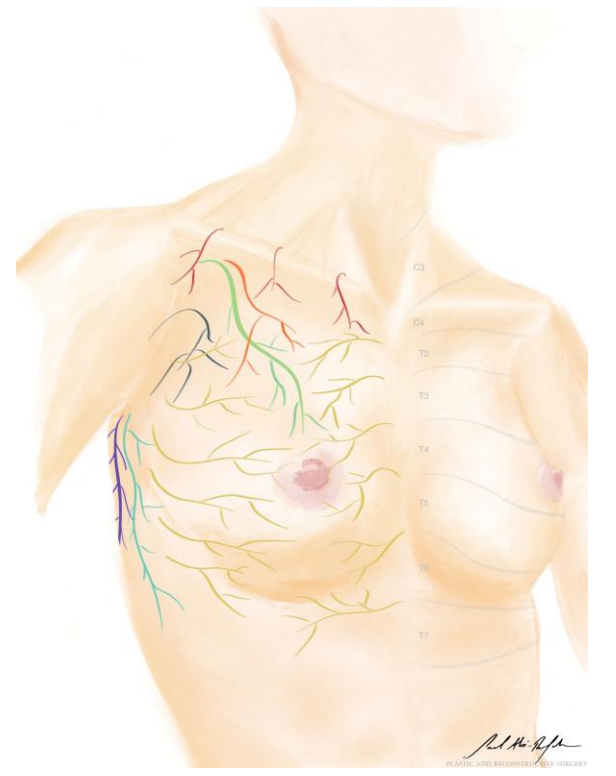


Figure 1. Regional breast innervation anatomy, including supraclavicular nerves (red), lateral pectoral nerve (green), medial pectoral nerve (orange), intercostobrachial nerve (gray), lateral and medial anterior cutaneous branches of the intercostal nerves (yellow), long thoracic nerve (blue), and thoracodorsal nerve (purple). Source: Abi-Rafeh et al. (2022).

METHODS

- Patient cases from 2014–2023 were identified from the American College of Surgeons National Surgical Quality Improvement Program (NSQIP) database using the Current Procedural Terminology codes 19316 for mastopexy, 19318 for reduction mammoplasty, and 19325 for breast augmentation, and were included if they underwent surgery with general anesthesia (GA). Patients were considered to have received a PNB if they received regional anesthesia in addition to GA.
- Cases were excluded if they lacked information on the following variables: age, sex, race, ethnicity, and body mass index (BMI), or if they had neuraxial anesthesia.
- Multivariate imputation by chained equations and Rubin's Rules were used to approximate the values of missing data. Primary outcomes were comparison of PNB use across race-ethnicity groups and Firth's logistic regression to determine which race-ethnicity groups were independently associated with PNB receipt.

RESULTS

1. PATIENT COHORT

	Number of Cases	Number of Cases with PNB Use (%)
Mastopexy	5511	983 (18)
Reduction Mammoplasty	35,397	8371 (24)
Breast Augmentation	9719	1412 (15)
TOTAL	50,627	10,766 (21)

3. CLINICAL/DEMOGRAPHIC TRENDS

A significantly higher BMI was observed among patients receiving a PNB for mastopexy (GA: 27.1 [24.0–30.1], GA+PNB: 27.8 [24.3–31.6], $P=0.002$), reduction mammoplasty (GA: 30.7 [27.2–34.9], GA+PNB: 32.0 [28.3–36.2], $P<0.001$), and breast augmentation (GA: 23.2 [21.0–26.3], GA+PNB: 23.8 [21.3–27.2], $P=0.003$).

Race-ethnicity were classified into the following groups: non-Hispanic American Indian or Alaska Native, non-Hispanic Asian, non-Hispanic Black or African American, non-Hispanic Native Hawaiian or Other Pacific Islander, non-Hispanic White, non-Hispanic Other, including race categories with low frequency or unknown/unreported, non-Hispanic Two or More Races, and Hispanic.

Variations in PNB receipt were observed across race-ethnicity groups in mastopexy ($P=0.021$), reduction mammoplasty ($P<0.001$), and breast augmentation ($P<0.001$).

2. PNB USAGE TRENDS

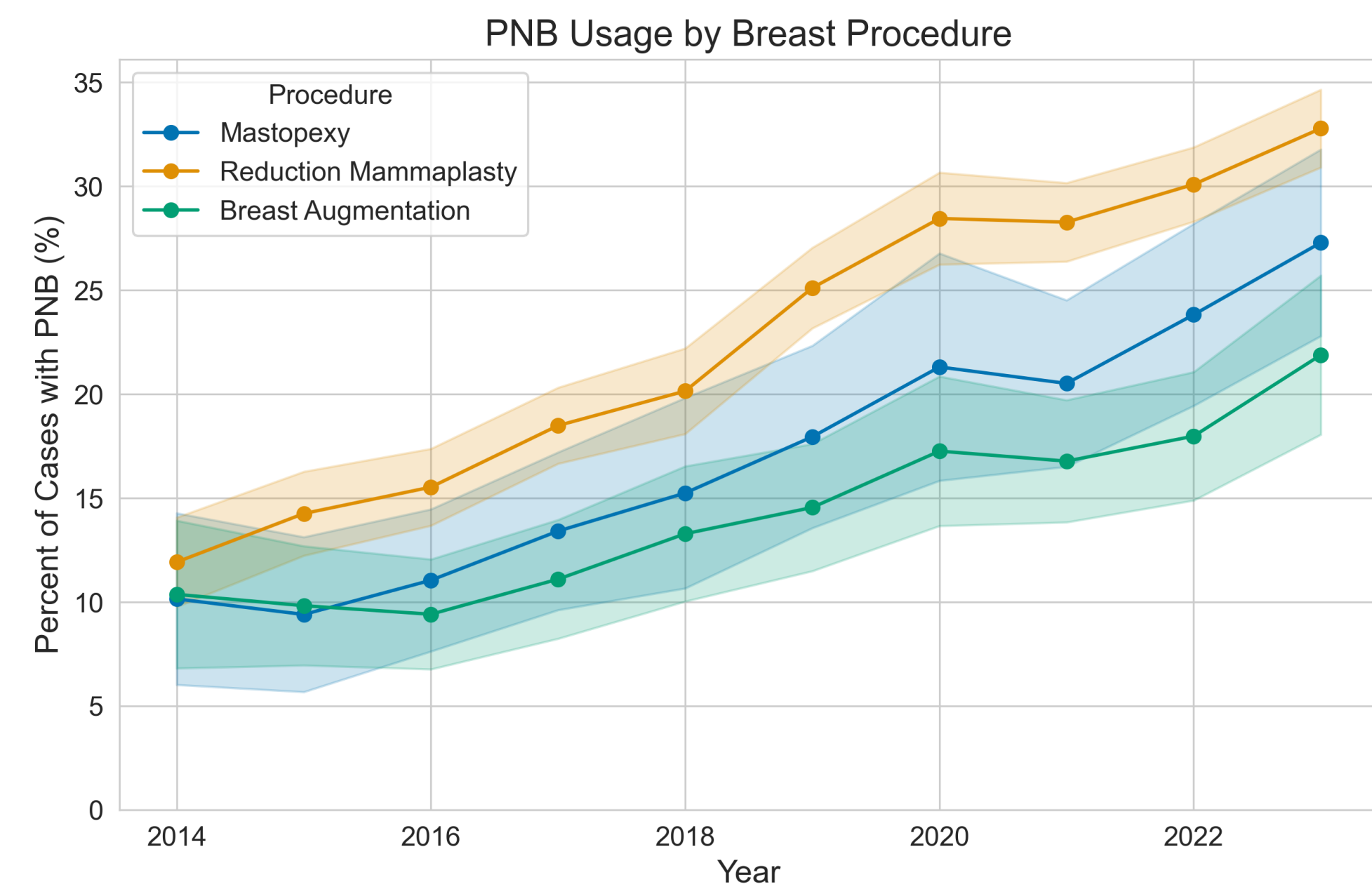


Figure 2. Percentage of cases with PNB use from 2014–2023, separated by procedure.

4. RACE-ETHNICITY ASSOCIATIONS WITH PNB USE

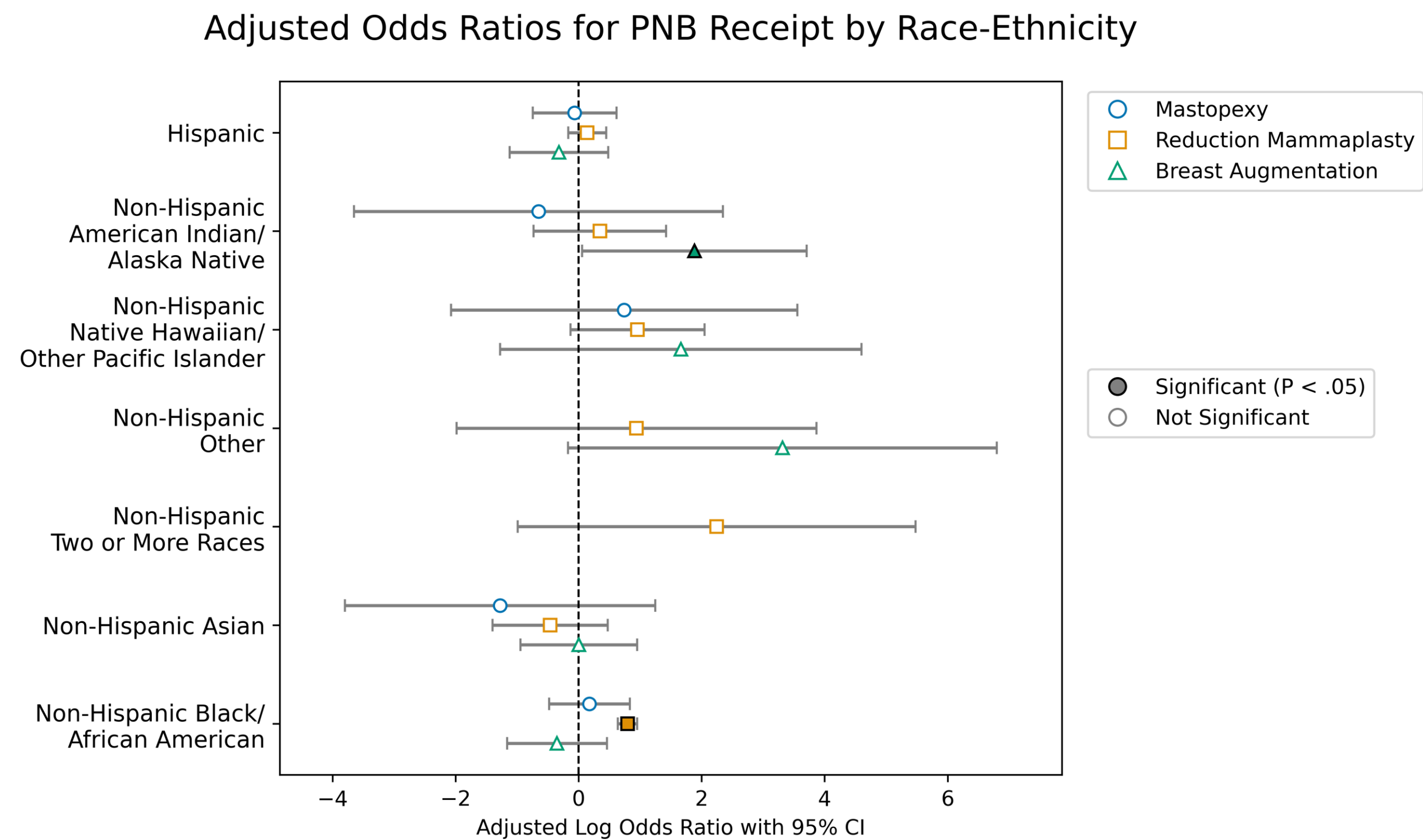


Figure 3. Firth's logistic regression adjusted odds ratios and 95% confidence intervals for race-ethnicity groups as independent variables associated with PNB use for each procedure. Models adjusted for age, sex, race/ethnicity, body, American Society of Anesthesiologists physical status, preoperative functional status, smoking, diabetes, hypertension requiring medication, history of heart failure, history of chronic obstructive pulmonary disease, dialysis, chronic steroid use, bleeding disorders, recent weight loss, preoperative hematologic and renal labs (hematocrit, platelet count, creatinine, international normalized ratio), operative time, total number of procedures, NSQIP-predicted morbidity, disseminated cancer, and ascites.

DISCUSSION

- PNB use in breast contouring surgery is becoming increasingly popular.**
- Rates of PNB use vary across race-ethnicity in breast contouring procedures, though several categories had low counts.**
- Additional studies are indicated to further investigate underlying reasons of variations in PNB receipt across various racial and ethnic groups for breast contouring procedures, and to foster equity in PNB use for individuals from various backgrounds.**

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